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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/937,659	11/06/2001	Bengt Nilsson	625-9937	5137
20736	7590	06/02/2004	EXAMINER	
MANELLI DENISON & SELTER 2000 M STREET NW SUITE 700 WASHINGTON, DC 20036-3307			DUONG, THANH P	
			ART UNIT	PAPER NUMBER

1764

DATE MAILED: 06/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/937,659

Applicant(s)

NILSSON, BENGT

Examiner

Tom P Duong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claims 9 and 10 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. In claims 9-10, there is no written description of "inert gas is added immediately above the product liquid receiver surface, to form a protecting blanket over the product liquid receiver by which means carbonation of boiling and splashing green liquor from the product liquid receiver is prevented."

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 9 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 9, the recitation of "inert gas is added immediately above the product liquid receiver surface, to form a protecting blanket over the product liquid receiver by which means carbonation of boiling and splashing green liquor from the product liquid receiver is prevented" is inaccurate and indefinite.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 and 3-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nilsson (6,062,547) in view of PCT WO 01/27384 (PCT '384). Regarding claims 1 and 3, Nilsson '547 discloses a process for the recovery chemicals and energy the spent liquor obtained in the chemical pulping process (Col. 7, lines 56-60), which the spent liquor is gasified (Col. 5, lines 5-7) under sub-stoichiometric conditions (Equations 1-6, Col. 3 and Col. 4) produce partly at least one phase of solid and/or fused material (Col. 6, lines 24-25) and partly at least one phase of a flammable gaseous material (Col. 5, lines 28-29), where after the said phases are cooled direct contact with a cooling medium (aqueous cooling media via nozzle 7), where after phase of solid and/or fused material is/are separated (compound separated structure 2) from the said phases of flammable gaseous material order dissolved and collected as product liquid in a product liquid receiver (14). Nilsson '547 fails to disclose the cooling medium (9) consists of an essentially water-free cooling medium, which cooling medium is at least partly vaporized cracked, whereby the vaporized/cracked cooling medium is drawn off (20) together with the said phase of flammable gaseous material, plus that the cooling medium (9) after

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vaporizing/cracking increases the calorific value of flammable gaseous material relative the calorific value of the flammable gaseous material without addition the essentially water-free cooling medium. PCT '384 teaches the cooling medium of support fuel such as turpentine, tall oil, and methanol are used in conjunction electric filter ash in order to maintain the temperature of gasifier, which facilitates conversion and reduction of the electric filter ash to sulphide form (page 4, lines 14-31 and page 7 lines 36-38). Thus, it would have been obvious in view of PCT '384 to one having ordinary skill in the art to modify the gasification process of Nilsson '547 with the cooling medium as taught by PCT '384 in order to facilitate the conversion and reduction of filter ash to sulphide form.

Regarding claim 4, Nilsson '547 discloses the cooling medium is recovered in the chemical pulping process or in the process for recovery of chemicals and the spent liquor (Col. 7, lines 56-61). Regarding claim 5, Nilsson '547 discloses the contact between the flammable gaseous material and the product liquid is avoided (Col. 5, lines 35-36). Regarding claim 6, Nilsson '547 discloses the cooling medium (via nozzle 7) is sprayed into the mixture of solid and/or fused material and flammable gaseous material produced the gasification (Fig. 1), preferably connection the separation of these two phases (Col. 6, lines 24-41) from each other. Regarding claim 7, Nilsson discloses the cooling is carried out a first stage (down-coming tube 2) in connection with the separation the material phases (solidified particles 5 and combustion gas) produced by gasification from each other, where after further cooling carried out in a second stage (cooling in second internal vessel 12, Col. 6, lines 61-67) with a second cooling medium consists essentially of water (Col. 7, lines 45-46). Nilsson '547 fails to disclose the

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cooling of a water-free cooling medium (9) is carried out a first stage. PCT '384 teaches the cooling medium of support fuel such as turpentine, tall oil, and methanol are used in conjunction electric filter ash in order to maintain the temperature of gasifier, which facilitates conversion and reduction of the electric filter ash to sulphide form (page 4, lines 14-31 and page 7 lines 36-38). Thus, it would have been obvious in view of PCT '384 to one having ordinary skill in the art to modify the gasification process of Nilsson '547 with the cooling medium as taught by PCT '384 in order to facilitate the conversion and reduction of filter ash to sulphide form in the first stage. Regarding claim 8, Nilsson '547 discloses the separation in the separation forms a part of the total reaction vessel an essentially even temperature maintained, which temperature corresponds the gasification temperature (Col. 8, lines 1-15).

4. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nilsson (6,062,547) in view of Kignell (4,808,264) and Kohl (4,773,918). Nilsson '547 fails to disclose the cooling medium consists of a liquefied gas of nitrogen, methane, propane, and other hydrocarbons which are gaseous at NTP. Kignell teaches the cooling medium or support fuel such as gas (Col. 1, lines 67-68 and Col. 2, lines 1-2) including nitrogen (Col. 4, lines 9-10) which aids in maintaining the heat balance around the reactor. Kohl also makes it clear the use of natural gases or volatile hydrocarbons in the gasification zone 14 increases the heating value of the product gas (Col. 7, lines 48-55). Thus, it would have been obvious in view of Kignell and/or Kohl to one having ordinary skill in the art to modify the gasification process of Nilsson '547 with volatile

hydrocarbon as taught by Kignell and/or Kohl in order to maintain the heat balance in the reactor as taught by Kignell and/or increases the heating value of the product gas as taught by Kohl.

5. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over the applied references (Nilsson '547 in view of PCT '384), as applied in claim 1 above, and further in view of Kohl (4,773,918). Regarding claim 9, the applied references in claim 1 above fail to disclose an inert gas is added above the product liquid receiver surface to form a protective blanket over the product liquid receiver to prevent carbonation boiling and splashing green liquor from the product liquid receiver. Kohl discloses the benefits of blowing the inert gas down the fuel bed to minimize entrainment of the solids in the gases rising from the fuel bed to create a distinct line of separation between zones. Thus, it would have been obvious in view of the Kohl to one having ordinary skill in the art to modify the gasification process of the applied references with the inert gas in the fuel bed as taught by Kohl in order to gain the above benefits. Regarding claim 10, it is best understood by examiner (in view of Applicant's specification on page 5, lines 22-28) that Nilsson '547 discloses the aqueous water bath 11 in the second internal vessel 12 adjacent to the receiver liquor 14, and this aqueous water bath cools the solidified particles 5 prior to falling into the product receiving liquor 14 in the vessel 3.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom P Duong whose telephone number is (571) 272-2794. The examiner can normally be reached on 8:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tom Duong
May 11, 2004

TD



Glenn Caldarola
Supervisory Patent Examiner
Technology Center 1700